FINAL
Washington State Department of Ecology
Solid Waste Advisory Council Subcommittee on Electronics Waste
June 8, 2005

The Solid Waste Advisory Subcommittee (SWAC) considering Electronics Waste (E-waste) met on Wednesday, June 8, 2005 in Federal Way, Washington.

SWAC Subcommittee Members Present: Nancy Atwood, AeA; Dennis Durbin, Stevens County; Jan Gee, Washington Retail Association; Eric Hulscher, Goodwill Industries; Sego Jackson, Snohomish County; Craig Lorch, Total Reclaim; Suellen Mele, Washington Citizens for Resource Conservation; Jay Shepard, Ecology; Bill Smith, City of Tacoma Solid Waste; Mo McBroom, WashPIRG; Frank Warnke, Advocates, Inc. Also present were members of the Agreement Dynamics facilitation team: Dee Endelman, facilitator and Ginny Ratliff, notetaker.

Attachment #A to these notes is a list of all participants, including audience members, many of whom are members of the Technical Team.

Welcome and Introductions

The facilitator, Dee Endelman, welcomed the group, reminded everyone of the Subcommittee purpose and ground rules and led a brief round of introductions of both Subcommittee and audience members.

Review of Remaining Discussion Issues: Jay Shepard reviewed 12 outstanding issues for the group to discuss based on key elements of the Legislation (Attachment B). He then reviewed the first six policy issues that relate to financing, and provided an analysis paper to stimulate the group's discussion (Attachment C). He noted that issues #7-12 will likely be discussed at the next meeting.

Regarding issue #1 in Attachment C, one committee member commented that collective responsibility is not necessarily linked to a consumer fee model. Therefore, issue #1 should be separated into two issues: a description of individual and collective responsibility and a description of cost internalization and advanced fees. Dee invited committee members to have individual conversations with Jay about the issues in that attachment.

Problem Statement: Dee Endelman thanked SWAC Subcommittee members Suellen Mele, Grant Nelson and Vicki Austin, who drafted the E-Waste Subcommittee's Problem Statement (Attachment D).

Financing Options: Next, the Subcommittee reviewed the compiled results of their evaluation of four financing models (Attachment E). Dee noted that the Association of

Washington Business's results had not been received and that, since AeA's members had differing points of view on these options, their representative had chosen not to complete an evaluation. However, responses were received from other SWAC members representing industry, retailers, environmental groups, charities and local government. She noted there seemed to be the most support around Option #3, the Alternative Model.

Jay Shepard described elements of Option #3 and the considerations he took into account as he wrote it.

Option #3*:* Manufacturers who sell covered electronics in Washington must write and submit a plan, collective or individual, that addresses recycling of these products. In addition, the plan must show how the manufacturer will collect, transport and process without additional cost to the consumer; rely on existing infrastructure (as much as possible); assure recycling services throughout Washington to individuals, small businesses, schools, government and charities.

Collectors, transporters, and processors of e-waste will register with Ecology, who will in turn provide this list to manufacturers. The products will be labeled as sold in Washington. Collectors of orphan products may charge a fee for accepting those products. There is a collective industry target recovery rate by 2012 that might be 80% of televisions sold in the past 14 years and all computers sold in the previous 6 years.[1] If targets aren't met by 2012, the State will implement a standard program for collecting, transporting, and processing covered products.

In developing this option Jay noted that he specifically omitted "how" manufacturers were to implement their individual or collective plans. He wanted to encourage creativity, competitiveness and peer pressure to achieve the best plans and reach the collective goals. He also noted that this plan minimizes government involvement, unless manufacturers don't meet the goals in 2012.

After his presentation, Subcommittee members raised points and asked questions, including:

- Does Option 3 include historic product or just new product sold after the date of the program implementation? (Answer: Option 3 does not address historic product.)

- Given that there are numerous options and possible combinations of options, why is the Subcommittee only considering four options for financing? (Answer: These options are meant to be starting points for discussion. There are many permutations of these options).

[1] These target goals were chosen based on collection information from Florida.

- Do we have any information on whether these options will work financially; will they pay for themselves and solve the problem? (Answer: These programs are fairly new and therefore we don't have enough data to know what's going to work. The latest information on the advanced recovery fee [ARF] in California is that 3-5 units are sold for every unit expiring. For now, this ratio of fee collected to materials expiring will create enough money to pay for the number of units that will be recovered and this will continue into the future. At some point, there will be an imbalance where there are more machines expiring than fees being collected to recover them. There needs to be more fiscal projections to understand when in time that will happen.)

- In the case of California, they collected $15 million in the first quarter of their program, had claims of approximately $2.5 million, yet only paid out $200,000 because there was not sufficient documentation that the collected e-waste was from California. In this case, documentation is a burden. Maine's program may face similar documentation issues. However, if there's a national system, this problem will be resolved.

- In the cases of Holland and Switzerland's ARFs, over time the fees were reduced as efficiencies in the system brought the costs down.

- Initially, in California, they projected that a television could be recycled for $4.20, however, based on skepticism that that fee was too low, the amount there was increased to $8. Dave Thompson from Panasonic noted that in California his company projected 1.8 million televisions would be disposed of, but the state projected 6 million.

- It was recommended that the group study Hennepin County, Minnesota (Minneapolis-Saint Paul), which has had curbside e-waste collection since 1992.

- Washington's population is predicted to increase as much as 3 million people in 2025, so Washington will be inheriting products from other states as the population grows.

- A policy should be included that addresses the potentiality of two fee imbalance questions: What to do with excess fees that could be collected? What to do if the fees collected aren't enough to cover the costs of the system? Earlier this year California had an excess of funds from aluminum cans, and took $80-$90 million and put it in the general fund.

- Is there an economist to assist us with fee projections and cost of recycling? Answer: The economist assigned to this project has left Ecology for another job. Jay will find resources to help with projections.

Dee facilitated a discussion of what the group liked and what their concerns were about Option #3:

LIKES:

- It is building on the existing infrastructure.
- It allows for individual (or collective) responsibility for businesses.
- The fee, implemented if targets aren't met by 2012, would be collected at wholesale level (minimizes administration) and would cover all costs.
- It has performance standards.
- There's a plan that needs to be submitted; and there's a back-up plan.
- The labeling and recording aspect.
- It gives manufacturers a choice.
- Likes flexibility of system that addresses most of major points in legislation.
- Covers small businesses, schools, charities, as well as individuals.
- If manufacturers are tasked with responsibility and don't comply, there is a back up if it doesn't work (and it looks at the whole system).

CONCERNS:

- #1 under Option 3 is not a requirement and if a manufacturer chooses not to submit a plan until 2012 there's no consequence.
- Doesn't cover orphan and historic waste; prospective waste only. Many of the subcommittee members were highly concerned about this issue.
- Labeling for Washington State.
- There could be an incentive for manufacturers to do nothing. (There could be manufacturer who prefers "stick" to "carrot." Why would they do initial part of program?) Under this scenario, those who didn't comply would bring everyone down; responsible manufacturers who develop plan and follow it could actually be penalized.
- Target numbers are unrealistic and would result in "stick" no matter what.
- Performance standards are good, but they're the wrong ones, the whole industry standard is a disincentive and the timing is an issue.

- Timing issue: If you have to meet these performance targets in 6 years, but you're establishing targets on products that won't retire for 6-14 years, by 2012 you'll be lucky to get 2% so manufacturers will be getting the stick anyway.

- Current materials are not affected, so we're living in Option #4 until at least 2012.

- There is no provision for orphan or historic waste.

- There's no incentive or requirements for creating less toxic products.

- Labeling results in collectors needing to sort out different brands and reporting is costly (collectors would have sorting nightmare).

- The system is in the hands of the manufacturers and a lot of waste will have been generated in the meantime if the manufacturers fail.

- Concerns about labeling the product as being sold in Washington, including: manufacturers don't track how many units they are selling in each state; retailers would have to unload boxes and put label on; product won't look new if retailers open boxes; could create black market for labels, or labels could be pulled off erroneously; label could make recycling more difficult; even with labels, non-labeled products will end up on the system; labeling is potentially duplicative of the need to submit a plan.

- Small manufacturers may not be there when you come to collect for or return their equipment.

- This represents a lot of work for the consumer – I have to find out manufacturer's plan and follow it.

- Someone collects, reviews, monitors plans. Who is running it and where is the money coming from?

- Too many different plans and different ways to handle causes friction down stream.

- Small manufacturer having to create a plan would be too costly; need a threshold.

- Given that there are so many manufacturers in the marketplace who will be developing systems, it is duplicative and may not be the most effective.

- If a consumer purchases a computer/television in another state, that consumer gets a free ride with his/her e-waste.

Other thoughts and comments:

- A plan should include the ultimate destination of all the e-waste—make it a standard of the plan.
- Re-manufacturers shouldn't have to do the plan; they're reducing the waste stream anyway.
- So many plans may negate marketplace efficiency.
- What about a readable scan that's already on the computer instead of a label?
- Sego Jackson rated system #3 higher than he would have now that he understood that historic waste were not addressed in this plan.
- Washington does not need to strictly follow the model(s) promoted in other states and may take components of both financing approaches.
- Option #3 addressed more than what is required in 2488, and addressed concerns from Goodwill Industries.
- It would be most effective for SWAC to focus on the basic concepts so as not to become mired in the details; for example, California spent months discussing what were to be "covered electronic products."
- Model #3 has made some improvements on elements of the other two models.
- Some committee members noted that their minds had been changed through this exercise. The criteria helped to evaluate each plan more objectively.
- It would be advantageous for manufacturers to create products with 50-year life spans.
- Since there are collective goals for recovery, how do you get manufacturer accountability to make the whole system work? (Jay Shepard suggested peer pressure, but welcomed other ideas to achieve collective accountability.)

Audience members were given an opportunity to provide comments, and those included:

- How does Option #3 promote the criteria of convenience and long-term opportunities?

- Considering the amount of oversight Ecology would have to have for Options #1 and #3, it would be simpler to do an excise tax.

- The waste that manufacturers are collecting is hazardous waste, and we're not allowed to do that unless we're permitted. In Maine we're being forced to collect these back, and we have superfund liabilities.

Jay then posed the question of what will it take to make parts 1-8 work in Option #3? Comments included:

- Fee would be handed down to consumer in the retail price because retailer pays wholesaler who pays manufacturer.

- There needs to be a way to handle historic, orphan and migrating waste to avoid free riders on the system.

- A computer is covered, but mice and keyboard aren't covered;

Industry Approaches to E-Waste Problem: Next, manufacturers were given an opportunity to share what financing approach they are proposing to deal with e-waste and why.

Advanced recovery fee: David Thompson, spoke first, representing Panasonic and the Electronic Manufacturers' Coalition for Responsible Recycling, a coalition of companies including Canon, Hitachi, IBM, LG Electronics, JVC, Mitsubishi Electronic, Philips, RCA, Sanyo, Samsung, Sharp, and Sony. This coalition has researched the collection, recycling, and financing issues in Japan, Taiwan, Europe, Canada, and the United States. Based on this research, they believe the advanced recovery fee approach is the simplest and solves the most problems. Their advanced recovery fee model has retailers collecting the fee at the point of sale. States or independent third parties would administer the fees, which would cover the cost of collecting the product, sending to recyclers, and educating the consumers on their program. Retailers would be paid a 3% administration fee. Manufacturers would be making efforts to design products that are more easily recycled, and a list of materials contained therein would be reported to the state, who in turn would publish it. In the case of Panasonic, they are spending approximately $150 million/year to make their products more environmentally viable. Retailers are not the collection site under this model. There would be a set amount of money paid out of this system to those who collect products and to those who recycle products. If a retailer wanted to collect products, they would be compensated at the collection rate. Retailers in California are considering whether or not collection should become a line of business for them.

From the California experience, manufacturers don't recommend a testing procedure for hazardous components. Rather, they recommend a list of covered products regardless of whether they contain hazardous materials or not.

In Alberta, Canada, where the wholesalers pay the ARF, concern has been expressed by retailers that it increases product cost for them. In Maine at present, there are 10 consolidation points that they collect the products, determine who is responsible for them, and require proof that the products are from Maine. David stated that this created "several little bureaucracies."

David recommended a $5/television ARF. The coalition is also discussing setting a cap on the fee and being able to raise/lower it as the system warrants. Also they are considering instituting an "EPEAT Program," for manufacturers who make environmentally responsible products, similar to the Energy Star program for energy efficiency. He indicated that the coalition is struggling to find a market-based design incentive and is hoping to make products 75% recyclable.

Internalized cost structure: Larry King from Hewlett Packard (HP) discussed their model of manufacturer responsibility for their products, which they believe is best for the environment and the consumer. They view recycling like transportation and packaging—it's part of the supply chain of the manufacturing process. He noted that California's ARF raised $15 million to pay for $2 million of service. If, on the other hand, the manufacturer is responsible for recycling, the company will drive the cost down as far as it can, in overhead, in design, in the contracts with processors. He cited that the ARF in Europe is 4 times more costly than producer responsibility models. That's why HP, Sony, Braun and Electrolux are doing their own recycling in Europe.

When products are designed with recycling in mind, it also helps prevent bad choices in marketing, like painting computers or putting stickers on the products. Collection and transport is paid by the manufacturer to retailer and/or to local government authority (in rural areas). He noted that only 14% of the manufacturers make up 76% of the e-waste stream. HP plans to have multiple locations for take back and incentives for the consumer to use those locations (e.g., 10% off HP products if you bring your computer back to store X.)

He also indicated that HP used to favor the ARF, but from their experience in Europe they now believe the producer responsibility model is the most effective.

Other Financing Options Discussion: The group discussed options like an ARF paid at the wholesale level with manufacturers getting the ARF back when they recycle the product. They also discussed an ARF with an opt-out plan for manufacturers who preferred a producer responsibility approach, like HP. They also discussed an ARF system for TV and a cost internalization system for IT. Some SWAC members noted that a dual system would result in double administration and twice the cost. One member suggested the combination of ARF at first sale or an invisible fee model with an

opt-out option for manufacturers, which the state has to approve. They also considered a producer responsibility model with an opt-out for those who prefer an ARF system.

Members discussed the evolution of the talks that resulted in Maryland's new law. Frank Marella of Sharp offered to provide the background as to why television manufacturers didn't agree with the new rule but computer manufacturers did.

In response to an inquiry from a SWAC member, Sego Jackson described the National Center for Electronics Recycling Multi-state Third Party Organization project and the related Northwest Third Party Organization (NWTPO) project. NWTPO is comprised of 9 manufacturers and others who will be working to figure out the functions that a third party organization can play in providing collection and recycling services. A 6-month study process has been started to research issues pertaining to TPOs. Those interested in tracking the process can see information posted at http://www.electronicsrecycling.com/NCER/

One SWAC member representing the haulers group raised concerns about third parties, as it may negatively impact the existing system.

Jay also shared research that Ha Tran from Ecology did on plastics-- where do they come from, how they are made, the cost differences between virgin and recycled products (Attachment F).

Action Items

- Jay Shepard will locate resources to assist with economic analysis.
- Jay Shepard, in consultation with others, will put together an alternative financing option based on today's discussion, for Subcommittee review prior to the next meeting.
- Jay Shepard will prepare issues papers on the remaining issues for Subcommittee review prior to the next meeting

The meeting adjourned at 3:00 p.m.

ATTACHMENT A

Nancy Atwood
Ron Biery
Rud Browne
Dan Coyne
Frank Dick
Kim Ducote
Dennis Durbin
Dave Godlewski
Tiffany Hatch
Kim Huff
Eric Hulscher
Sego Jackson
Larry King
Craig Lorch
Frank Marella
Mo McBroom
Suellen Mele
Lisa Sepanski
Jay Shepard
Jerry Smedes
Doug Smith
Bill Smith
Cullen Stephenson
Jay Sternoff
David Stitzahl
Dale Swanson
Butch Teglas
David Thompson
Ha Tran
Frank Warnke

ATTACHMENT B

Issues for Discussion

Issue 1: Individual Responsibility or Collective Responsibility? - Reference: ESHB 2488 Section 1 (2) b. and c. and Section 1 (3) b. and i.

Issue 2: Government Mandated Participation or Voluntary Programs - Reference: Section 1 (3), e.

Issue 3: Historic, Orphan, Migrated and Abandoned Products - Reference: Section 1 (2) e. and Section 1 (3) l.

Issue 4: Scope of Program - Reference: Section 1 (1), Section 1 (5) and Section 1 (3) k.

Issue 5: Recovery, Reuse, and Recycling Goals, Standards, Requirements - Reference: Section 1 (3) d. and e.

Issue 6: What is considered recycling? - Reference: ESHB 2488 in its entirety, Chapter 70.95 RCW

Issue 7: Export of Electronic Products - Reference: Section 1 (3) j.

Issue 8: The Effects of Landfill Disposal Bans and Suitability of Landfills for Disposal of Electronic Products - Reference Section `1 (2) f and Section 1 (3) g.

Issue 9: Business Financial Incentives - Reference Section 1 (3) h

Issue 10: Economic Development Opportunities, Stimulating Materials Markets and Jobs - Reference Section 1 (3) f.

Issue 11: Urban and rural recycling challenges - Reference: Section 1(2) a.

Issue 12: Impacts on local governments, nonprofit organizations, waste haulers, and other stakeholders - Reference: Section 1 (2) d.

ATTACHMENT C

Consumer Electronic Products Collection Recycling and Reuse in Washington State

Policy Issues to Address

Note: The following represents an effort to describe and sort through the policy issues related to financing. These issues are rooted in the legislation, ESHB 2488, and considered in light of the research done and subcommittee discussions to date. I am providing it to the Subcommittee to help stimulate the policy discussions that need to happen so our efforts will continue to move forward productively. These issues seem to be the key points that must be sorted out, in that they establish the foundation upon which electronic products reuse and recycling programs are created.

—Jay Shepard, Project Manager

Issue 1:
Individual Responsibility or Collective Responsibility?

This issue has been the major stumbling block in national discussions, stalling progress toward establishing a national recycling solution for electronic products. The issue boils down to these two questions:

- Should individual manufacturers be held accountable for their own products and related impacts? Or,
- Can collecting and recycling end of life electronics be accomplished through a collective responsibility model that places a blanket fee on all products, managed by a third party, which pays for all associated costs?

Individual Responsibility
Individual responsibility requires that producers independently create and finance their own end-of-life programs for specific brand name products. Generally, a plan is written that describes the programs. If the program is legally mandated, the plan is generally submitted to a government agency for review and approval. The plan must assure that the manufacturer establishes and meets recovery targets. Ideally, costs of the program are rolled into overall product costs. With this approach, the consumer does not see a fee, either at the point of purchase or at end of life. They only see how they can turn in their end of life product to be recycled. Some companies in Europe have demanded individual responsibility[i].

Benefits
Market driven and competitive – Programs that are managed most efficiently will reduce overall product cost to the consumer, providing a cost competitiveness factor in the marketplace.

Encourages design changes that improve the end of life value and recycle-ability of products. Knowing that products will be returned to them for end of life management

will likely cause manufacturers to assure their products are designed to be efficiently handled and to minimize hazardous material content. European studies have shown that individual responsibility programs have created stronger feedback loops to product designers.

Creates direct accountability to the source – Individual responsibility requires products to be returned to the manufacturer through programs that are convenient for the consumer.
Flexibility - The manufacturers can establish their own material collection and processing systems, contract the services out to another business or businesses or rely on existing infrastructure and services. This system also allows for the opportunity to utilize a reverse vending or reverse distribution model, which uses the product supply infrastructure to back haul end of life products in trucks that would normally run empty on their return runs.

Potentially reduces the number to steps in handling the product at end of life. If a manufacturer designs a collection and processing system that works efficiently, there should be a minimum number of steps between the consumer and the end of the recycling process. This should prove to be more cost effective and energy efficient. This will have the joint benefit of providing the least cost option and reduced energy consumption, an environmental benefit.

Easy for consumers to use - If designed in a way that the associated costs are incorporated into the cost of the product, consumers will be more likely to participate by sending their end of life equipment to the recycling option offered. If the cost is identified as a separate fee as part of the requirements for purchasing, consumers are likely to look for products that don't state a fee yet provide the same service.

Drawbacks
Confusion - Consumer information may not be clear, leading to confusion as to what to do with end of life products.

Minimal accountability to a regulatory authority – Because these types of programs are operated privately and competitively, businesses are not likely to share information about quantities of product returned or material actually recycled into new products, declaring that information proprietary. Performance against a target or goal could be seen as suspect.

Difficult to measure effectiveness – Without knowing the details of products returned, performance cannot be measured. One way of addressing this is through waste composition studies or monitoring incoming wastes at disposal facilities to determine if electronic products are being discarded. However, that would still not demonstrate the recovery rate of the products as there would be no number to evaluate that which is disposed, against. ?

Externalized costs - In some cases, the manufacturer may only be responsible for their end of life products only after the product arrives at their receiving dock, requiring others to pay the cost of return. This is a major downside in that consumers are not as likely to participate in a program where they have to pay for shipping and handling cost to transport their product back to the manufacturer.

Potentially reduces the number of in state jobs associated with recycling – While one of this model's best attributes is that it encourages efficiency and competition, it could very well cut certain collectors and transporters out of the process in order to reduce costs. If that is the case then the work associated with those activities would be eliminated.

Collective Responsibility

Collectively sharing end-of-life responsibility with other industry counterparts, participating manufacturers delegate responsibility to others. Funding for this model generally uses a consumer fee model to pay for collection, transport and processing costs associated with the manufacturer's products. The funds are managed by a third party organization, whether a governmental entity or a private, industry-funded non-profit. This third party is responsible for assuring that end-of-life management of the members' products are taken care of responsibly, providing subsidies to collectors, transporters and processors to handle returned products. This model relies on retail business to collect the consumer fee at the point of sale.

Benefits

Minimizes involvement - For the manufacturers, this eliminates, or significantly reduces, their active involvement in end of life management of their products. This in turn reduces the cost of their products at retail. Fees are charged and collected as a separate cost at point of purchase.

Creates a pool of funds that is used to pay for collection, transportation and processing of products – Costs associated with handling end of life products will be covered. Businesses involved in these activities will be assured that their costs will be covered.

Built in performance measurement – In order to receive reimbursement of costs, businesses handling products at end of life are required to report quantities of products collected and maintain documentation for audits. These reports are the basis for cost reimbursement. These data would also provide a performance measure of the various alternatives employed for collection, transportation and processing covered products.

Flexible – Provides an opportunity for many parties to be involved in the collection, transportation and processing of products. This in turn stimulates creativity in approach and efficiency in system design in order to realize the maximum profit available.

Drawbacks

Out sources (externalizes) costs and responsibility – By creating a consumer fee and a third party organization, manufacturers have no responsibility for end of life management of their products. While this approach reduces direct cost for the

manufacturer, all other parties become involved and responsible for product end of life management:

- Retailers would be required to collect fees.
- Consumers would be required to pay fees at point of purchase, as they dispose of their old products and replace with new.
- Local governments, responsible for solid waste management in the state, will create new systems to manage these and future new products that are introduced, which will require additional revenue to operate.

May be most costly to the consumer - This model does not encourage the most efficient collection, transportation and processing systems as there is no incentive to reduce overall systems costs. Retailers will need to be compensated for the service of fee collection. Costs and profits for each entity along the way, from collection to final recycling, will need to be paid. While each of these entities may find efficiencies within their individual company to improve their own company profitability, there is no incentive to improve efficiency within the overall system that will reduce costs to the consumer without regulatory controls, whether by government or the third-party organization. These controls would add more costs to the system.

No incentive for improving product design for environmental performance at end of life – With no end of life involvement with their products, manufacturers will be less likely to design their products for ease of recycling or to minimize hazardous substance content.

Reliance on a third party manager adds cost – Creating a third party manager to oversee the accounts receivable and payable process, certify material handlers, and create and use an audit system will be costly. Adding bureaucracy, private or public, will only raise the cost of the program to the citizens of the state. This is not a least cost alternative.

Financial Responsibility

Boiled down further, the issue of responsibility comes down to “who pays?” In reality, in all approaches, the consumer ultimately pays for disposal of end of life products, regardless of what the product is.

An associated issue arises in relation to end of life management costs; which consumer pays?
Currently, a standard practice in the life of electronics is that they are often “handed down” to another person for use – whether a son or daughter, or donated. The recipient of the used equipment is generally of lower income and is the least able to pay for appropriate end of life management. Products are often abandoned, left with thrift or charity organizations or dumped illegally. This places an undue financial burden on society and its economy as a whole.

Issue 2: Government Mandated Participation or Voluntary Programs

The efforts to collect, transport and process electronic products in place in Washington today are voluntary. Based on reported recycling of electronics under the agency's recycling survey, these programs do not effectively capture a significant quantity of end of life electronic products compared to that which is available. The International Association of Electronics Recyclers reported that most electronic product presently collected for recycling are received from business, industry and governments, which are not the primary focus of ESHB 2488. The quantities of consumer electronic products collected have primarily been collected at short-term collection events sponsored by partnerships between retailers, local governments and manufacturers.

While by themselves, the quantities collected at these events look impressive, on the greater scale of things, these quantities are small in comparison to that which is available.
Some manufacturers have set up voluntary take back programs that charge end-of-life fees to consumers for each unit returned. Some accept the product when delivered to them at no charge. The consumer packages and pays for shipping. It appears that the participation in these programs has been relatively low. These voluntary programs are financed for the most part, by the consumer through an end of life fee..

In the final analysis, it appears that voluntary collection programs, like most other voluntary initiatives in society, only draw the active participation of a few of the many potential participants.

Issue 3: Historic, Orphan, Migrated and Abandoned Products

Historic and orphan products are those products that cannot be identified as being ascribed to any particular manufacturer and are in possession of consumers prior to the adoption of any legislatively established program. This is another major problem that has held back progress in national efforts to establish electronic product recovery programs. The question is who pays for the associated costs for these products?

Presently in 2005, there are an estimated 2,738,947 computers and monitors, and 6,350,331 televisions in use in Washington households. There will be approximately 4 million new computers with their associated monitors and peripherals sold into the state from 2006 to 2010. In that same period, 3.2 million new televisions will be purchased. These numbers will grow each year beyond 2010. The number of products to be managed at end of life in the future far outnumbers the quantity historic products in existence prior to 2005.

This issue should not be a barrier to establishing an electronic product recycling program for the state. These products will need to be managed.

Issue 4: Scope of Program

There are several aspects to consider when establishing the scope of the program, such as:

- Should the program include reuse?
- What products really should be included?
- Who should be able to use the services?

Reuse

Reuse of products has generally been a private sector enterprise. With products other than electronic, thrift stores and charitable organizations have flourished. Used but usable items available in second-hand stores have value and a market demand.

Certain items lose value quickly, however, and don't have a strong market demand. When these products are donated, or even "traded in" at electronics retailers they are most often considered waste and are sent out for recycling. The intrinsic value to the products may have a lesser value than that of the cost of handling and processing, so a fee is charged for the service. For the thrift industry, these fees constitute a significant portion of their operating budget.

Reuse is dependent upon the value of the usefulness of a product. If the product remains useful, the value of the product is more than the intrinsic value of the materials of which it is made. When a product is no longer useful, when it can no longer perform the function for which it was designed, that functional value is reduced to zero. The product's remaining value is in the materials that can be recovered and recycled. When the value of the material is less than the cost of handling and processing, the product becomes a liability.

Products

The legislature identified covered electronic products as televisions, computers and computer monitors sold in the state for personal use. This definition is very narrow in scope, avoiding the inclusion of those same electronic products from commercial, small business, governments and schools. The quantity of electronic products from these sources may well be equal to or greater than the same products in use by consumers for private use.

In addition, there are large quantities of other electronic products available to consumers, many with short life cycles. Cellular telephones, audio equipment, video gaming equipment and home convenience appliances are but a few of them. Add to that the large quantity of office equipment used in small business, government, and schools other than computers, such as fax machines, copiers, printers, calculators, and telephones, the quantities become significant.

The quantity of electronics being recycled and the quantity of products covered by ESHB 2488 is small compared to the quantity available for recycling.

Scope of Service

Due to the fact that the definition of covered electronic products in the law only focuses on consumer level televisions, computers and monitors, one could assume that any collection, transportation and processing system established for product recycling should only focus on the individual citizen's personal use products. However the bill did ask Ecology to evaluate options for small business, governments, schools and charities.

The objective for these sectors should be the same as for consumers; "to find the least cost alternative for the citizens of the state that results in the maximum amount of end of life product being recovered."

Issue 5: Recovery, Reuse, and Recycling Goals, Standards, Requirements

The adage "if you don't know were you are going, any road will get you there" applies here. Determining where to set a goal or performance standard becomes the policy issue. What target is reasonable?

Currently, there are no mandatory recycling goals or standards for any specific material type in Washington State. There is no mandatory state level recycling programs. The Revised Code of Washington requires that local solid waste planning jurisdictions assure that adequate recycling services are available for residents to access. What that access is, is determined by the planning jurisdiction. Local jurisdictions can establish mandatory participation if they choose. Mandatory participation is not required by state law.

In 1989 the legislature established a goal of recycling 50% of solid wastes generated in the state by 1994. The goal was not reached. Reasons for not reaching the goals are many, such as:

- Loss of funding to support public outreach and education programs that inform residents about recycling opportunities;
- The booming economy of the 1990s created more consumption of products while the recycling industry did not keep pace with the supply of recyclable materials available;
- The unprecedented population growth in the state brought new residents who where unfamiliar with recycling opportunities;
- Initiative 601 caused the elimination of programs that supported recycling, such as the tire recycling account and the solid waste management account.

The date to meet the goal was recently changed to 2007. However, it remains a goal without consequences should it not be met.

Goals, targets or standards are only effective if there is a system established to monitor progress and suggest process changes to achieve them. In addition, consequences need to be established and enforced. If such a system is not established, or worse, established and then closed down, the likelihood of achieving the goal, target or standard are limited.

Consequences should provide an incentive to comply rather than a penalty for non-compliance. Penalties are only effective incentives when the cost is high enough to cause the desired behavior should there be resistance.

Rather than taking a traditional penalty assessment approach, other alternatives should be considered.

Issue 6: What is considered recycling?

ESHB 2488 directed Ecology to recommend an electronic product collection, recycling, and reuse program for the state. According to Chapter 70.95 RCW Solid Waste Management -- Reduction And Recycling, “”recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration.”

Clearly, by this definition, incineration or landfill disposal of end of life products does not constitute recycling. Recycling is “transforming or remanufacturing waste materials into usable or marketable materials…” Since ESHB 2488 is focused on electronic collection, recycling and reuse, the use of materials contained in electronic products should only be recovered as a material as usable and marketable material. Those materials should not be used as a fuel in a combustion process.

This does not preclude the application of heat to transform recovered plastics into pellets or scrap metal into ingots or sheets for commercial application, for example. However, the heat source cannot be from combustion of the recovered material itself to be considered recycling.

Clean Production Action, Extended Producer Responsibility, http://www.cleanproduction.org/AAbase/default.htm EPR Home. INDUSTRY REACTIONS TO Extended Producer Responsibility (EPR)

" We see it as an opportunity in the U.S. where we are getting into the recycling business. We're presently considering the European market situation. And there will be other major changes. Future transportation may not involve owning a car. Instead, you may own the right to transportation. We will make vehicles and either lease or loan them to you. We'll end up owning a vehicle at the end-of-life and have to dispose of it. We will treat it as a technical nutrient, making it into a car or truck again. We're getting ourselves ready for the day when this is truly cradle-to-cradle. We're not fighting it, we're embracing it."

--Statement by Bill Ford, CEO of Ford Motor Company, 1999—

Many companies, particularly multi-national affiliates who reside in Europe, are supporting EPR as they see it as an opportunity to be more competitive and economically efficient with the resources they use in products. Major electronic manufacturers in Europe, such as Apple Europe, Hewlett Packard, Sony Europe, and Intel and environmental NGOs released joint statements of support for the Waste from Electrical and Electronic Equipment Directive (WEEE).
WEEE mandates that individual electronic manufacturers take back their products at the end-of-life as well as design out harmful materials and meet recycling/reuse targets. Manufacturers in Europe not only supported the EPR legislation, but also advocated for mandated individual responsibility, which means corporations have to take back their products independently. Individual responsibility is critical to helping manufacturers redesign products as the alternative system whereby companies fund a third party to collectively take back products does not reward companies who improve the environmental design of their products.

"Individual responsibility encourages competition in the environmental performance and rewards improvements. Collective responsibility makes environmental improvements pointless and rewards the irresponsible and the lazy." --Electrolux, the world's largest producer of kitchen appliances--

Joint Press Statement
of Industry, Consumer and Environmental Organisations
on Producer Responsibility in the
Waste Electrical and Electronic Equipment (WEEE) Directive

This Statement refers to the responsibility of financing the management of WEEE for products sold in the future, and not the organisation of recycling systems. As regards all products sold in the past (historical waste), both the Council and the European Parliament have proposed that producers shall share the cost of recycling.

The European Parliament has concluded its First Reading and the Council has adopted its Common Position on the proposed WEEE directive. The Second Reading of the European Parliament will be completed by April 2002.

One of the objectives of introducing producer responsibility is to create incentives for producers to improve the design of their products with a view to enhancing their environmental performance. We support this ambition.

The European Parliament has made a constructive proposal that would secure this objective by establishing a strong producer responsibility, whereas the Council's Common Position fails to create the necessary incentives.

In addition, through its Article 7.4 the Council has proposed that existing producers should always finance the recycling of products from producers that disappear, or where the producer cannot be identified. Our opinion is that this stands on weak legal grounds. It would also become a dangerous incentive for free-riding, meaning short-sighted actors (producer = importer and/or manufacturer) would be able to place products on the market without addressing how these products should be recycled in the future.

Instead, the Parliament has proposed that each producer would be required to provide appropriate guarantees for the management of WEEE. This establishes the necessary legal instrument for proper enforcement and addresses the issue of free-riders. This is essential to avoid placing unjustified burdens on tax-payers and consumers.

For the second reading, we urge the Council, the European Parliament and the Commission to:

⇒ **Support the proposal of the European Parliament for financing on a individual basis and the need to provide appropriate guarantees for the financing of the management of WEEE (and the section of Article 3 defining individual financing)**

⇒ **Reject the proposal of the Council regarding free-riders (Article 7.4 of Council Common Position)**

AeA (American Electronics Association) Europe
Association of Netherlands ICT Sector (ICT Milieu)
Bellona Europa – Environmental NGO
BEUC – The European Consumers' Organisation
Confederation of Swedish Enterprise
European Environmental Bureau
Japan Business Council in Europe
SRI – The Swedish Recycling Industries' Association
Swiss Association of Information, Communication and Organisation Technology
VI – Association of Swedish Engineering Industries
WWF-UK (Part of the global environmental network)
Zentralverband Elektrotechnik- und Elektronikindustrie e.V (ZVEI) – The German Electrical And Electronic Manufacturers' Association

AB Electrolux
Agilent Technologies
Apple Europe
Fujitsu Siemens Computers GmbH
Hewlett-Packard
ICL plc
IKEA Service Center S.A
Intel Corporation
Länsförsäkringar Insurance Group
Lucent Technologies
Nokia
Oekopol Institute, Hamburg
Sanyo
Siemens AG
Sony
Sun Microsystems.
The Gillette Group Europe/ Braun

ATTACHMENT D

E-waste Subcommittee
Problem Statement

Although members of the E-Waste Subcommittee do not agree on all issues related to e-waste or the full scope of the problem, we have come together to work on how to better manage, reuse and recycle e-waste because we all agree on the following:

- E-waste is projected to grow in the foreseeable future.
- Proper management of e-waste can be a cost/burden to charities, local governments, businesses and citizens of the State.
- Electronic waste, if managed improperly, is a risk to human health and environment.
- Current infrastructure may not be sufficient to handle increasing volumes of e-waste.
- Costs of recycling most electronic product waste are greater than current material value.
- People are generally unaware of opportunities that currently exist to recycle their electronic products.*
- Current collection options for recycling electronic products are not adequate across the state.
- Proper e-waste recycling can result in job creation here in Washington State and can offset the need for new resource extraction.

* Facilitator's note: The subcommittee members worked hard and collaborated well to come up with these descriptions. However, one difference remained on which agreement could not be reached. Two members of the subcommittee believe this bullet should read: "People are generally unaware of opportunities that currently exist to recycle **or properly dispose of** their electronic products."

ATTACHMENT E

Model # 1: Extended Manufacturer Responsibility Model (Maine)

1. All products sold in the State are labeled with the manufacturer's name.
2. Manufacturers who will not comply with the producer responsibility model cannot sell their products in the State.
3. Local governments can participate in collection and recycling of covered electronic products by having them delivered to a consolidation facility (e.g., transfer station, recycling facility, by contracting for curbside pickup, etc.)
    a. Consolidation facilities identify the manufacturer items received and keep tab on level of covered products coming in.
    b. Consolidation facilities work with manufacturers to implement a financing system to cover handling, transportation and recycling costs.
4. Manufacturers may work with consolidation facilities but, in any event, are responsible for handling and recycling of covered products produced by the manufacturer, purchased by citizens of the State and received at consolidation facilities.
5. Manufacturers are also responsible for a pro rata share of orphan waste.
6. Manufacturers put together a plan for collection and recycling or reuse of covered products. There can be a collective recovery plan with other manufacturers.
    a. Plans include, among other things, public education, implementation and financing details, performance measures, alternative actions and annual sales data of the number/type of covered product sold by the manufacturer in the State.
    b. Manufacturers also have to submit annual reports with statistics on products sold in the State.

Model # 2: Advanced Recovery Fee Model (California)

1. Only covered products that can be sold in the European Union can be sold in California.
2. Manufacturers send a notice to retailers that sell any covered electronic device that they make, notifying them that the device is covered by a fee.
3. If a retailer sells a refurbished covered device, the manufacturer is required to comply with notice requirements only if manufacturer directly supplies the refurbished device to the retailer.

4. If the manufacturer gets concurrence by the state that a device wouldn't be a hazardous waste when discarded, the device is no longer covered by a recycling fee.
5. When a consumer purchases a covered device (new or refurbished), s/he pays a fee ($6-10 depending on the size of the screen).
6. The retailer needs to collect this at time of purchase and may keep 3% of the fees as reimbursement for costs associated with collecting the fee. The retailer sends the rest to the State.
7. The recycling fee is stated as such on the receipt.
8. An Electronic Waste and Recovery and Recycling Account is established to receive the fees and pay for the program.
9. Fees can be changed by the California Integrated Waste Management Board.
10. There are set procedures for paying recycling fees to the State (quarterly) and a government structure to handle and oversee the program.
11. If a manufacturer isn't in compliance with the law, that manufacturer cannot sell its products in the State.
12. The product has to be labeled with the manufacturer's brand label (readily visible).
13. Manufacturers need to turn in at least annual reports with data on the devices (including hazardous materials and products sold, and retailers to which the manufacturers sent notices of the fee, including Internet and catalogue retailers).
14. A person who exports covered electronic waste or a device intended for recycling or disposal to a foreign country or to another state for export to a foreign country has to demonstrate that it's not creating a problem elsewhere.
15. There are authorized collectors and recyclers who will be paid by the State from the fees. These entities have requirements, also.

Model # 3: Alternative Model

1. Each manufacturer whose covered electronic products are sold in the state submits a plan to recover end of life products. The plan can be from an individual manufacturer or from a consortium of manufacturers. The plan must:
    a. Show how the manufacturer will provide collection, transportation and processing conveniently and at no additional costs to consumer;
    b. Rely on existing infrastructure and businesses in the state to the extent practical;
    c. Show how the approach is the most cost effective to citizens; and

d. Assure recycling services throughout the state to individuals, small businesses, schools, government and charities;

e. Include a campaign to promote reuse of covered products and end of life management of the products by final users.

2. Collectors, transporters and processors of covered products register with Ecology. A list of registered collectors, transporters and processors will be provided to manufacturers for their use when developing their plans and negotiating services needed to implement their plans.
3. The products sold by these manufacturers are clearly labeled, including designation that the product was sold into Washington State.
4. Products moved into the state after purchase will be treated as a product sold within the state and handled according to the manufacturer's plan.
5. Collectors of orphan covered products may charge a fee for collecting, transporting and processing costs.
6. The manufacturers submit periodic reports to Ecology with data about units recycled.
7. There is a collective industry target recovery rate that must be met by 2012. This target might be, for example, 80% of all TV's sold in the past 14 years and all computers sold 6 years previously.
8. Manufacturers can work together, and with others (local governments, retailers, charities, etc.) to develop a system that will enable them to meet these goals through this model.
9. If the targets aren't met, by 2012, the state will implement a standard program for collecting, transporting and processing covered products.
10. The state program will be supported by a fee collected at the wholesale level, or retail level (when a covered product is sold directly to consumers from the manufacturer or assembler) as part of the total retail cost; not a separate fee. The fee will cover all costs including retail administrative costs, government administrative costs, and collecting, transporting and processing costs. .
11. The retailer will pay the fee in advance as part of the wholesale cost. The fee will be part of the retail price of the product, not an added fee collected at retail.
12. Retailers and manufacturers will report the number, brands and types of products sold into the state.

<u>Model # 4: Non-Financed Approach</u>

1. All programs remain voluntary and there are no goals.
2. Local governments may finance, as approved by their local authorities, reuse and recycling programs.

3. Companies are encouraged to introduce/maintain reuse and recycling programs but these are not required.
4. Ecology is given additional funds to inform citizens of available recycling opportunities.

E-Waste Recycling Solutions
Evaluation Sheet for Subcommittee Members

Eight SWAC Subcommittee members evaluated the potential of the Extended Manufacturer Responsibility Model (Maine) to address the criteria listed in the table. The following represents a compilation of their responses. Additional comments are included at the end of this packet.

Model Under Review: #1 - Extended Manufacturer Responsibility Model (Maine)

Criteria	High	Medium	Low
Promotes convenient, effective and responsible reuse & recycling throughout the State	3	4	1
Creates long-term opportunities for Wa. Businesses	3	2	3
Results in long-term system financing[i]	3	3	3
Solves environmental issues here without creating them somewhere else or violating international law	2	4	2
Enables shared responsibilities & opportunities for different sectors of economy involved with electronics (business, government, charities, consumers)	1	6	1
Supports a level playing field for businesses relative to one another & on national level	3	2	3
Creates regulatory certainty for businesses	3	5	1
Ensures environmentally sound end-of-life management	2	3	3
Encourages design for reuse & recycling & DFE	3	4	1
Supports conservation of natural resources	4	3[i]	
Takes advantage of current infrastructure, where feasible	2	4	2
Is available & effective throughout State & flexible for different parts of State	3	4	1
Educates consumers regarding e-waste	4	2	2
Supports protection of human health	3	4	1
Has goals, accountabilities & performance standards		5	3
Addresses the problems	1	6	1
Is stand along for State and able to transition to national system	5	2	1

Accommodates future changes in technology	5	1	2
Prevents/avoids sham recycling	1	4	3
Ensures that benefits for modifications or current system are commensurate with costs of modification.	3	2	3

E-Waste Recycling Solutions
Evaluation Sheet for Subcommittee Members

Eight SWAC Subcommittee members evaluated the potential of the Advanced Recovery Fee Model (California) to address the criteria listed in the table. The following represents a compilation of their responses. Additional comments are included at the end of this packet.

Model Under Review: Model # 2: Advanced Recovery Fee Model (California)

Criteria	High	Medium	Low
Promotes convenient, effective and responsible reuse & recycling throughout the State	6	2	
Creates long-term opportunities for Wa. Businesses	5	2	1
Results in long-term system financing	4	4	
Solves environmental issues here without creating them somewhere else or violating international law	5	3	
Enables shared responsibilities & opportunities for different sectors of economy involved with electronics (business, government, charities, consumers)	2	4	2
Supports a level playing field for businesses relative to one another & on national level	2	4	2
Creates regulatory certainty for businesses	6	1	1
Ensures environmentally sound end-of-life management	5	2	1
Encourages design for reuse & recycling & DFE	2	4	2
Supports conservation of natural resources	2	5	1
Takes advantage of current infrastructure, where feasible	5	3	
Is available & effective throughout State & flexible for different parts of State	7	1	
Educates consumers regarding e-waste	3	4	1
Supports protection of human health	1	7	
Has goals, accountabilities & performance standards	1	5	2
Addresses the problems	2	6	
Is stand along for State and able to transition to national system	1	3	4
Accommodates future changes in technology	3	3	2
Prevents/avoids sham recycling	3	4	1

Ensures that benefits for modifications or current system are commensurate with costs of modification.	1	6	1

E-Waste Recycling Solutions
Evaluation Sheet for Subcommittee Members

Eight SWAC Subcommittee members evaluated the potential of the Alternative Model to address the criteria listed in the table. The following represents a compilation of their responses. Additional comments are included at the end of this packet

It should be noted that, during the meeting, subcommittee members became aware that this model did not cover historic waste. Several noted that their evaluations would have been lower had they realized this point.

Model Under Review: Model # 3: Alternative Model

Criteria	High	Medium	Low
Promotes convenient, effective and responsible reuse & recycling throughout the State	6	2	2
Creates long-term opportunities for Wa. Businesses	7	1	
Results in long-term system financing[i]	6		1
Solves environmental issues here without creating them somewhere else or violating international law	2	4	2
Enables shared responsibilities & opportunities for different sectors of economy involved with electronics (business, government, charities, consumers)	7		1
Supports a level playing field for businesses relative to one another & on national level	5	2	1
Creates regulatory certainty for businesses	6	1	1
Ensures environmentally sound end-of-life management	3	3	2
Encourages design for reuse & recycling & DFE	3	4	1
Supports conservation of natural resources	6	2	
Takes advantage of current infrastructure, where feasible	7		1
Is available & effective throughout State & flexible for different parts of State	7		1
Educates consumers regarding e-waste	5	3	
Supports protection of human health	5	2	1
Has goals, accountabilities & performance standards	7	1	
Addresses the problems	4	3	1
Is stand along for State and able to transition to national system	6	1	1

Accommodates future changes in technology	6	1	1
Prevents/avoids sham recycling	3	5	
Ensures that benefits for modifications or current system are commensurate with costs of modification.	4	3	1

E-Waste Recycling Solutions
Evaluation Sheet for Subcommittee Members

Eight SWAC Subcommittee members evaluated the potential of the Non-Financed Approach to address the criteria listed in the table. The following represents a compilation of their responses. Additional comments are included at the end of this packet.

Model Under Review: Model # 4: Non-Financed Approach

Criteria	High	Medium	Low
Promotes convenient, effective and responsible reuse & recycling throughout the State			8
Creates long-term opportunities for Wa. Businesses		1	7
Results in long-term system financing			8
Solves environmental issues here without creating them somewhere else or violating international law		1	7
Enables shared responsibilities & opportunities for different sectors of economy involved with electronics (business, government, charities, consumers)		1	7
Supports a level playing field for businesses relative to one another & on national level		1	7
Creates regulatory certainty for businesses		1	7
Ensures environmentally sound end-of-life management			8
Encourages design for reuse & recycling & DFE			8
Supports conservation of natural resources		1	7
Takes advantage of current infrastructure, where feasible	1	2	5
Is available & effective throughout State & flexible for different parts of State	1	1	6
Educates consumers regarding e-waste		4	4
Supports protection of human health			8
Has goals, accountabilities & performance standards			8
Addresses the problems		1	7
Is stand along for State and able to transition to national system	2	n/a[i] 1	4
Accommodates future changes in technology	1	3	3[i]

Prevents/avoids sham recycling			8
Ensures that benefits for modifications or current system are commensurate with costs of modification.		1	7

ADDITIONAL COMMENTS RECEIVED:

#1 – Extended Manufacturer Responsibility Model (Maine)

Criteria	Comment(s)
Solves environmental issues here without creating them somewhere else or violating international law	Description doesn't mention recycling or export standards, but Maine program does have some standards
Enables shared responsibilities & opportunities for different sectors of economy involved with electronics (business, government, charities, consumers)	Does not allow for multiple collectors
Ensures environmentally sound end-of-life management	Description does not mention recycling or export standards, but Maine program does have some standards
Accommodates future changes in technology	Unclear under Maine model who is responsible for collecting CRT legacy products if producer exits CRT sales and sells plasma/LCD technology products; also new market entrants may ultimately not be held responsible for collection if they exit the market prior to the end of the product life span

1) Note: This is only a partial producer responsibility model, which is why I've marked so many criteria "medium."

2) This model is only partial EPR and leaves the costs of collection and first leg of transport to local governments to bear. Without more information, it is difficult to state how effective this program would be in providing statewide services. Some of the rankings are based on the assumptions that corporations will be held to high standards in part through desire to protect brand name and avoid liability and citizen, customer, NGO, and media pressure. Example: "avoids sham recycling. "It ranks in the medium category for most criteria compared to current situation. This model can be vastly improved upon, and really represents a "consolidation system" model instead of EPR. Model 3 is more of an EPR model.

What is needed to improve this model:

- Manufacturers must cover collection and transport costs to consolidation.
- Manufacturers can make business arrangements with a diversity of local entities to provide the collection services.
- A diversity of parties should have incentive to collect, and no retailer or governments should be required to collect.
- Needs clear goals, performance standards, ESM standards and enforcement.
- Needs to address export issues.
- Should adopt ROhs like rules or reference.
- Needs mechanism to encourage use of state businesses and processors.
- Some level of consumer education needs to be responsibility of manufacturers.

ADDITIONAL COMMENTS RECEIVED:

Model # 2: Advanced Recovery Fee Model (California)

This model is a high performer but has some problems as well. Some of these problems can be addressed by having the manufacturer submit the fee, instead of the retailers, and by having a Third Party Organization manage the overall program rather than a government entity. The criteria don't get clearly to some of the key issues with this system.

What is needed to improve this model:

- Needs clear goals, performance standards, and ESM standards.
- Needs to more clearly address export issues.
- Does not include PBDE restrictions in place in Europe.
- Consumer education needs to be clearly addressed.
- Should seek mechanism to engage manufacturers more directly in end of life management and costs to drive design and system efficiencies.
- Have manufacturers pay fee instead of retailers.
- Use Third Party Organization (s) for implementation.

ADDITIONAL COMMENTS RECEIVED:

Model # 3: Alternative Model

Criteria	Comment(s)
Results in long-term system financing	Note: Financing mechanism for orphan waste needs to be changed

Solves environmental issues here without creating them somewhere else or violating international law	No export or recycling standards set
Ensures environmentally sound end-of-life management	No export or recycling standards set
Supports protection of human health	No export or recycling standards set
Addresses the problems	(Would be "high" if export & recycling standards added)
Prevents/avoids sham recycling	No export or recycling standards set

This model has some problems that can be fixed. The BIG problem is the way that Orphan material is dealt with – it is not viable, and as a result, brings the ranking down in some areas, as it leave a significant problem unresolved. Some of the rankings are based on the assumptions that corporations and the state will be held to high standards in part through desire to protect brand name and avoid liability and citizen, customer, NGO, and media pressure. Example: "avoids sham recycling. "

What is needed to improve this model:

- The manufacturers must finance orphan waste. They need to pay for the cost of orphan material through current or past market share or return share. It is not viable for collectors to charge for just orphan products (how would they know?).
- Needs clear goals, performance standards, ESM standards and enforcement.
- Needs to address export issues.
- Should adopt ROhs like rules or reference.

ADDITIONAL COMMENTS RECEIVED:

Model # 4: Non-Financed Approach

Criteria	Comment(s)
Is stand alone for State and able to transition to national system	this is not a system, but can certainly transition to a national system

This is not really a model and is incapable of addressing the problem adequately.

ATTACHMENT F

(Petroleum Products – Overview of how recyclable plastic components in electronics are produced from crude oil will be provided on Ecology's website.)

Attachment G:

Facilitation Feedback Form – E-Waste Project June 8, 2005

Agreement Dynamics received 23 meeting evaluations; the compiled results are below.

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
The meeting was productive.	**0**	**0**	**6**	**12**	**5**
	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
The facilitator kept us on track.	**0**	**0**	**1**	**17**	**5**
	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
The facilitator maintained neutrality.	0	0	2	8	13
	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
The E-Waste Project process is clear to me and I understand where we are today, and what the next steps will be.	**0**	**0**	**11**	**10**	**2**
	Strongly Disagree	**Disagree**	**Somewhat Agree**	**Agree**	**Strongly Agree**
Overall, the Subcommittee is making good progress toward achieving project purpose.	**0**	**2**	**9**	**10**	**1**
		1 respondent had "No opinion."			

Additional comments:

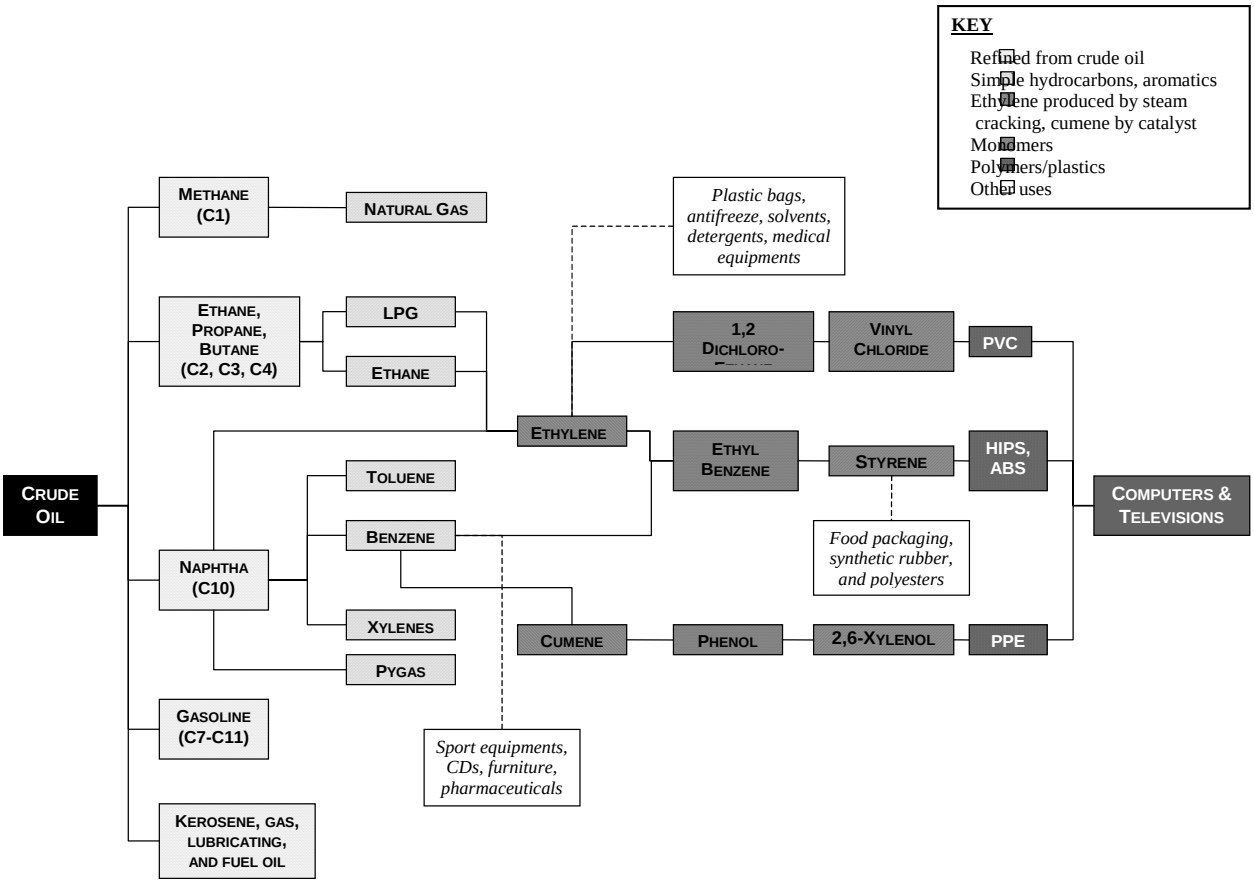
- Thanks for being flexible.
- Nice flexibility with the agenda/direction.
- Good balance on letting members talk versus others.

- Not sure where the third model came from. It was a good effort but should have received more input from stakeholders prior to being included.

(The Electronic Manufacturers' Coalition for Responsible Recycling provided a booklet, *End of Life Management of Electronics, Implementation of an ARF-Financed and Stakeholder-Managed system.)*

Petroleum Products - Computers and Televisions

An overview of how recyclable plastic components in electronics are produced from crude oil



The Flow of Computer and Television Plastics